West Virginia **FOREST DISEASE CONDITIONS REPORT FOR 1988**

HARDWOOD DISEASES

Anthracnose of Hardwoods. Incidence of anthracnose disease of sycamore and other hardwoods was moderate to severe statewide. Incidence was heaviest along the state's major river drainages. This represents an increase in disease incidence over the previous four years.

Dogwood Anthracnose (Discula sp.) has now been found at seven locations in four West Virginia counties. The counties include Preston, Greenbrier, Jefferson and Berkeley. Surveys will be conducted to gain more knowledge about disease distribution.

Bull's eye leaf spot (Cristulariella pyramidalis) incidence was light this year statewide on maples and other hardwoods. Incidence was about the same as that reported in 1987.

Dutch elm disease (Ceratocystis ulmi). Disease incidence throughout the state was high again this year. This is probably the single most important forest and shade tree problem in West Virginia.

Elm Phloem Necrosis (Elm Yellows MLO). No diseased trees were reported during 1988.

Fireblight. This bacterial disease was widespread on crabapples and other members of the Rosaceae family. Moderate infection rates were reported throughout much of the southern and western portions of the state.

Hypoxylon Canker (Hypoxylon sp.). With the increase in dead and dying timber due to decline caused by drought and defoliation, there appears to be a corresponding increase in this opportunistic pathogen.

Oak decline, induced by drought and insect defoliation, has become a serious problem in West Virginia. Portions of the state have experienced severe drought the past two summers. Precipitation deficits exceed 10 inches in 15 western, central and southern counties. Dead and dying scattered trees are common throughout the state. Pockets of mortality 3-10 acres in size have been noted on dry ridges and rocky sites in several counties.

CONIFER DISEASES

Atropellis Canker (Atropellis tingens) continues to cause branch tip mortality in a number of Scotch pine Christmas tree plantings around the state. Although we once thought this disease was restricted to trees growing on poor ridge sites, we now see this pathogen on trees growing on the better sites. Some economic loss is incurred due to branch mortality in saleable Christmas trees.

Cytospora Canker (Cytospora kunzei). Cytospora canker is a fairly common disease occurring in nearly every county of the state. This disease is most commonly observed on Norway and blue spruce. However, this disease is also common in our native red spruce stands.

Diplodia Tip Blight (Diplodia pinea). This disease continues to be a problem on Austrian pine and mature Scotch pine. It is only rarely observed in Christmas tree plantings. Additionally, this disease problem has been associated with the decline and death of pitch pine at various sites in Pocahontas County.

Lophodermium Needlecast (Lophodermium seditiosum). There was a marked decrease in Lopodermium needlecast incidence. In 1988, only one grower in the state reported defoliation due to this disease problem. In 1987, 10 growers reported moderate to heavy defoliation.

Meloderma Needlecast (Meloderma dezmazierii). Disease incidence remained the same at the Braxton County plantation where this disease occurs. Approximately 50 trees remain infected in a stand of 30,000 trees. The diseased white pines are growing on a hillside near a pond. Apparently environmental conditions are perfect for infection and disease development.

Naemacyclus Needlecast (Naemacyclus minor = Cyclaneusma minor). Disease incidence remained low in 1988. This pathogen can be found in nearly every Scotch pine stand. It rarely causes enough damage to warrant control in West Virginia.

Pinewood nematode (Bursaphlenchus xylophilus). This pathogen has now been detected in dying conifers in 16 counties. Until 1987, the nematode had never been detected in any West Virginia Christmas tree plantations. This pathogen has now been detected in Christmas tree plantations in Jackson, Mason, Wood, Grant, Berkeley and Braxton Counties. Apparently, drought stress had predisposed the trees to infection.

Pine root decline (Leptographium procerum = Verticicladiella procera) continues to cause mortality in many white pine plantings. At least two growers have reported a definite decrease in disease incidence the past two years. Other growers

have noted that disease incidence has remained the same or increased.

Rhizosphaera Needlecast (Rhizosphaera kalkhoffii). Disease incidence has increased over the past 10 years on Norway and Colorado blue spruce. Although incidence has increased, we generally only observe light to moderate damage to individual trees or plantings of spruce trees.

PROJECTS

White Pine Blister Rust. The white pine blister rust control project was phased out on December 31, 1987. No more blister rust suppression work will be done. A spot check survey will be initiated to monitor disease incidence.

Oak Wilt Detection. Due to budgetary constraints, oak wilt surveillance flights were conducted in June over 18 high oak wilt disease quadrangles in the southwestern section of West Virginia. There were 113 oak wilt trees spotted.